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10/049,613	02/21/2002	Masatoshi Katayama	218877US2PCT	2566
22850 7590 07/27/2007 OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER WANG, QUAN ZHEN	
			ART UNIT 2613	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/049,613	Applicant(s) KATAYAMA, MASATOSHI	
	Examiner Quan-Zhen Wang	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2007 and 08 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed on June 8, 2007 in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 9, 2007 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-11 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1 and 7-9 recite the limitation of "to remove the video signal without termination". Nowhere did the specification as it was originally support the cited limitation. Therefore, the cited limitation of "to remove the video signal without termination" is considered as new matter.

4. Claims 1-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 recites the limitation of "each of said plurality of subscriber units comprises: a wavelength division multiplexer/demultiplexer configured to eliminate a particular wavelength signal from each of the plurality of subscriber units". However, the instant specification does not teach or disclose the cited limitation. For example, the subscriber unit with video receiver does not "eliminate a particular wavelength signal". Therefore, the specification does not enable claim 1 and its dependent claims.

Claim 7 recites the limitation of "wherein each of said plurality of subscriber units comprises a wavelength division multiplexer/demultiplexer configured to eliminate a particular wavelength signal from each of said plurality of subscriber units". However, the instant specification does not teach or disclose the cited limitation. For example, the subscriber unit with video receiver does not "eliminate a particular wavelength signal". Therefore, the specification does not enable claims 7 and 11.

Claim 8 recites the limitation of "wherein each of said plurality of subscriber units comprises a wavelength division multiplexer/demultiplexer configured to eliminate a particular wavelength signal from each of said plurality of subscriber units". However, the instant specification does not teach or disclose the cited limitation. For example, the

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subscriber unit with video receiver does not "eliminate a particular wavelength signal".

Therefore, the specification does not enable claim 8.

Claim 9 recites the limitations "each of said plurality of subscriber units comprise: a first wavelength division multiplexer/demultiplexer configured to demultiplex the video signals and signals other than the video signal; and a second wavelength division multiplexer/demultiplexer configured to eliminate a particular wavelength signal from each of said plurality of subscriber units". However, the instant specification does not teach or disclose the cited limitation. For example, the subscriber unit without video receiver does not comprise "a first wavelength division multiplexer/demultiplexer configured to demultiplex the video signals and signals other than the video signal".

Therefore, the specification does not enable claim 9.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 7-9 recite the limitation of "to remove the video signal without termination". However, the limitation "without termination" is a negative limitation that rendered the claim indefinite because it is an attempt to claim the invention by excluding what the inventors did not invent rather than distinctly and particularly pointing out what they did invent. In re Schleicher, 205 F.2d 185, 98 USPQ 144 (CCPA 1953).

Claims 1 and 7-9 recite the limitation of "to remove the video signal without termination". However, it is not clear what the cited limitation means. According to *Merriam-Webster's Collegiate Dictionary* (tenth edition), termination means: "end in time or existence". According to *The American Heritage College Dictionary* (fourth edition), termination means: "the end of something in time"; "the end of something in space". Therefore, the removing the video signal means termination of the signal in accordance with the definitions given by the above two dictionaries. Furthermore, at least one embodiment of the claimed invention clearly shows that the video signal is attenuated in a waveguide (see fig. 5). The embodiment undoubtedly shows "to remove the video signal by termination".

Claim 1 recites the limitation of "each of said plurality of subscriber units comprises: a wavelength division multiplexer/demultiplexer configured to eliminate a particular wavelength signal from each of the plurality of subscriber units". However, it is not clear what the cited limitation means since the cited limitation is contradictory to other limitations in the claim and the disclosure of instant specification.

Claim 7 recites the limitation of "wherein each of said plurality of subscriber units comprises a wavelength division multiplexer/demultiplexer configured to eliminate a particular wavelength signal from each of said plurality of subscriber units". However, it is not clear what the cited limitation means since the cited limitation is contradictory to other limitations in the claim and the disclosure of instant specification.

Claim 8 recites the limitation of "wherein each of said plurality of subscriber units comprises a wavelength division multiplexer/demultiplexer configured to eliminate a

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particular wavelength signal from each of said plurality of subscriber units". However, it is not clear what the cited limitation means since the cited limitation is contradictory to other limitations in the claim and the disclosure of instant specification.

Claim 9 recites the limitations "each of said plurality of subscriber units comprise: a first wavelength division multiplexer/demultiplexer configured to demultiplex the video signals and signals other than the video signal; and a second wavelength division multiplexer/demultiplexer configured to eliminate a particular wavelength signal from each of said plurality of subscriber units". However, it is not clear what the cited limitation means since the cited limitation is contradictory to other limitations in the claim and the disclosure of instant specification.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

8. Claims 1 and 7-9 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Admitted Prior Art (APA) fig. 1.

Regarding claims 1, as it is understood in view of the above 112 problems, the APA fig. 1 discloses a data transmission system including: a plurality of subscriber units (fig. 1, subscriber units 105a, 105b), having at least a subscriber unit with a video receiver (fig. 1, 105a) and a subscriber unit without a video receiver (fig. 1, 105b),

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configured to interconnect with a central office unit (fig. 1, central office unit 101) via optical fibers (fig. 1, fiber 103 and 104a-b), the central office unit is configured to multiplex a video signal (fig. 1, video signal 111) with signals other than the video signal (fig. 1, signal from transmitter 122) and to deliver them to the plurality of subscriber units, wherein each subscriber unit is configured to demultiplex a received signal (fig. 1, WDM 131a and 141a in subscriber unit 105a; WDM 131b and 141b in subscriber unit 105b), and each of said plurality of subscriber units comprises: a wavelength division multiplexer/demultiplexer (fig. 1, WDM in subscriber unit) configured to eliminate a particular wavelength signal from each of the plurality of subscriber units, wherein the subscriber unit with the video receiver (fig. 1, subscriber unit 105a) is configured to separate the video signal from the multiplexed signal received at the wavelength division multiplexer/demultiplexer (fig. 1, WDM 131a) and to input the video signal to the video receiver (fig. 1, video receiver 133a), and wherein the subscriber unit without the video receiver (fig. 1, subscriber 105b) is configured to separate the video signal from the multiplexed signal received at the wavelength division multiplexer/demultiplexer, to remove the video signal by termination (fig. 1, WDM 131b and terminator 135b. Note that the claimed limitation can be undoubtedly interpreted as "to remove the video signal by termination"), to separate the signals other than the video signal, and to input the signal other than the video signal to a transmitting and receiving section (fig. 1, transmitting and receiving section 134b).

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9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-3 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (APA) fig. 1 in view of Kurata et al. (U.S. Patent US 5,479,547).

Regarding claims 1, as it is understood in view of the above 112 problems, the APA fig. 1 discloses a data transmission system including: a plurality of subscriber units (fig. 1, subscriber units 105a, 105b), having at least a subscriber unit with a video receiver (fig. 1, 105a) and a subscriber unit without a video receiver (fig. 1, 105b), configured to interconnect with a central office unit (fig. 1, central office unit 101) via optical fibers (fig. 1, fiber 103 and 104a-b), the central office unit is configured to multiplex a video signal (fig. 1, video signal 111) with signals other than the video signal (fig. 1, signal from transmitter 122) and to deliver them to the plurality of subscriber units, wherein each subscriber unit is configured to demultiplex a received signal (fig. 1, WDM 131a and 141a in subscriber unit 105a; WDM 131b and 141b in subscriber unit 105b), and some of said plurality of subscriber units comprises: a wavelength division multiplexer/demultiplexer (fig. 1, WDM in subscriber unit) configured to eliminate a particular wavelength signal from each of the plurality of subscriber units, wherein the subscriber unit with the video receiver (fig. 1, subscriber unit 105a) is configured to separate the video signal from the multiplexed signal received at the wavelength division multiplexer/demultiplexer (fig. 1, WDM 131a) and to input the video signal to the

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video receiver (fig. 1, video receiver 133a), and wherein the subscriber unit without the video receiver (fig. 1, subscriber 105b) is configured to separate the video signal from the multiplexed signal received at the wavelength division multiplexer/demultiplexer, to remove the video signal (fig. 1, WDM 131b and terminator 135b), to separate the signals other than the video signal, and to input the signal other than the video signal to a transmitting and receiving section (fig. 1, transmitting and receiving section 134b).

The only difference between the APA and claim 1 is that the APA specifically utilizing a WDM 131b and a terminator 135b to separate and remove the video signal from the signal other than video signal. It would have been obvious to one having ordinary skill in the art at the time the invention was made to eliminate the WDM 131b and terminator 135b and incorporate a single WDM, such as the one disclosed by Kurata in fig. 5, to separate the video signal from the signal other than video signal, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art. *In re Karlson*, 136 USPQ 184. One ordinary skill in the art at the time when the invention is made would have been motivated to incorporate a single WDM, such as the one disclosed by Kurata in fig. 5, to separate the video signal from the signal other than video signal in the system of the APA in order to utilize the widely applicable waveguide type WDM module that can be manufactured in a simple manner.

Regarding claim 2, Kurata further discloses that the multiplexer/demultiplexer is configured to reflect the particular wavelength signal to reject its input (fig. 5, signal at λ_2).

Regarding claim 3, Kunikane further teaches that the multiplexer/demultiplexer comprises a reflecting layer (fig. 5, reflecting layer 5; fig. 6, reflecting layer 35) at an input end surface of an optical fiber of the subscriber unit.

Regarding claim 9, as it is understood in view of the above 112 problems, the APA fig. 1 discloses a data transmission system including: a plurality of subscriber units (fig. 1, subscriber units 105a, 105b), having at least a subscriber unit with a video receiver (fig. 1, 105a) and a subscriber unit without a video receiver (fig. 1, 105b), configured to interconnect with a central office unit (fig. 1, central office unit 101) via optical fibers (fig. 1, fiber 103 and 104a-b), the central office unit is configured to multiplex a video signal (fig. 1, video signal 111) with signals other than the video signal (fig. 1, signal from transmitter 122) and to deliver them to the plurality of subscriber units, wherein each subscriber unit is configured to demultiplex a received signal (fig. 1, WDM 131a and 141a in subscriber unit 105a; WDM 131b and 141b in subscriber unit 105b), and some of said plurality of subscriber units comprises: a first wavelength division multiplexer/demultiplexer (fig. 1, WDM 131a) configured to demultiplex the video signals and signals other than the video signal; and a second wavelength division multiplexer/demultiplexer (fig. 1, WDM 141b) configured to eliminate a particular wavelength signal from each of said plurality of subscriber units, wherein the subscriber unit with the video receiver (fig. 1, subscriber unit 105a) is configured to separate the video signal from the multiplexed signal received at the wavelength division multiplexer/demultiplexer (fig. 1, WDM 131a) and to input the video signal to the video receiver (fig. 1, video receiver 133a), and wherein the subscriber unit without the video

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receiver (fig. 1, subscriber 105b) is configured to separate the video signal from the multiplexed signal received at the wavelength division multiplexer/demultiplexer, to remove the video signal (fig. 1, WDM 131b and terminator 135b), to separate the signals other than the video signal, and to input the signal other than the video signal to a transmitting and receiving section (fig. 1, transmitting and receiving section 134b).

The only difference between the APA and claim 1 is that the APA specifically utilizing a WDM 131b and a terminator 135b to separate and remove the video signal from the signal other than video signal. It would have been obvious to one having ordinary skill in the art at the time the invention was made to eliminate the WDM 131b and terminator 135b and incorporate a single WDM, such as the one disclosed by Kurata in fig. 5, to separate the video signal from the signal other than video signal, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art. *In re Karlson*, 136 USPQ 184. One ordinary skill in the art at the time when the invention is made would have been motivated to incorporate a single WDM, such as the one disclosed by Kurata in fig. 5, to separate the video signal from the signal other than video signal in the system of the APA in order to utilize the widely applicable waveguide type WDM module that can be manufactured in a simple manner.

Regarding claim 10, Kunikane further teaches that the multiplexer/demultiplexer includes a first optical waveguide, a second optical waveguide, and a filter positioned such that the first optical waveguide and the second optical waveguide form a junction at the filter (fig. 5).

11. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (APA) fig. 1 in view of Kurata et al. (U.S. Patent US 5,479,547), and further in view of Kunikane et al. (U.S. Patent US 5,479,547).

Regarding claim 4, the APA and Kurata have been discussed above in regard with claims 1 and 3. The modified system of APA and Kurata differs from the claimed invention in that APA and Kurata do not specifically disclose that the reflecting layer comprises a dielectric multilayer filter. However, a dielectric multilayer filter is well known and widely used in the art. For example, Kunikane discloses a multiplexer/demultiplexer utilizing a dielectric multilayer filter to reflect a particular wavelength signal to reject its input (column 2, lines 49-50; and column 4, lines 47-48). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a dielectric multilayer filter, as it is disclosed by Kunikane in the modified system of APA and Kurata to reflect a particular wavelength signal to reject its input in order to use a reflective filter made with the well developed filter making method.

12. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (APA) fig. 1 in view of Kurata et al. (U.S. Patent US 5,479,547), and further in view of Rivoallan (U.S. Patent US 6,130,974).

Regarding claim 5, the modified system of APA and Kurata differs from the claimed invention in that APA and Kurata do not specifically disclose that the system

comprising an optical fiber with a core and a cladding that covers an external surface of the core, and that has multiple notched formed on the cladding to reflect the particular wavelength signal. However, it is well known in the art that an optical fiber with a core and a cladding that covers an external surface of the core, and that has multiple notched formed on the cladding to reflect the particular wavelength signal. For example, Rivoallan discloses an optical fiber (fig. 1) having a core (fig. 1, core 12) and a cladding (fig. 1, cladding 12) that covers the external surface of the core, and that has multiple notched formed on the cladding (fig. 1, Dmax and Dmin) to reflect a particular wavelength signal. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a multi-notched optical fiber, such as the one taught by Rivoallan, in the modified system of APA and Kurata in order to improve the efficiency to cut off a wavelength in addition to reflection by diffracting it away during transmission along the fiber.

13. Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (APA) fig. 1 in view of Kurata et al. (U.S. Patent US 5,479,547) and further in view of Ellison et al. (U.S. Patent US 6,556,757).

Regarding claim 6, APA and Kurata have been discussed above in regard with claim 1. The modified system of APA and Kurata differs from the claimed invention in that APA and Kurata does not specifically disclose that the wavelength division multiplexer/demultiplexer comprises an optical waveguide that is made of a polymer and absorbs a signal with a wavelength of 1650 nm, which is employed as the particular

wavelength signal. However, Ellison et al. from the same field of endeavor teach an optical fiber made of a polymer (Column 2, line 26) and absorbs a signal with a wavelength of 1650 nm, which is employed as the particular wavelength (absorption about a dB per meter at 1650nm, Fig.7). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a fiber, such as the one disclosed by Ellison, for the fiber in the subscriber transmission system of APA and Kurata to obtain a further effective attenuation of a wavelength by absorbing it when it propagates in the core and polymeric cladding layers of the fiber in addition to diffracting and reflecting it.

14. Claims 7-8 and 11 are rejected under U.S.C. 103(a) as being unpatentable over Kunikane et al. (US Patent No: 5,479,547) in view of Wright et al. (U.S. Patent US 6,411,410 B1) and further in view of Feldman et al. (US Patent US 6,577,414).

Regarding claim 7, as it is understood in view of the above 112 problems, APA fig. 1 discloses a data transmission system including: a plurality of subscriber units (fig. 1, subscriber units 105a, 105b), having at least a subscriber unit with a video receiver (fig. 1, 105a) and a subscriber unit without a video receiver (fig. 1, 105b), configured to interconnect with a central office unit (fig. 1, central office unit 101) via optical fibers (fig. 1, fiber 103 and 104a-b), the central office unit is configured to multiplex a video signal (fig. 1, video signal 111) with signals other than the video signal (fig. 1, signal from transmitter 122) and to deliver them to the plurality of subscriber units, wherein each subscriber unit is configured to demultiplex a received signal (fig. 1, WDM 131a and

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141a in subscriber unit 105a; WDM 131b and 141b in subscriber unit 105b), and said central office unit comprises: an optical distributor configured to distribute a video signal (fig. 1, LD 112) and to supply the video signal output to a wavelength division multiplexer/demultiplexer (fig. 1, WDM 113), wherein said some of said plurality of subscriber units comprises a wavelength division multiplexer/demultiplexer (fig. 1, WDM in subscriber unit) configured to eliminate a particular wavelength signal from each of the plurality of subscriber units, wherein the subscriber unit with the video receiver (fig. 1, subscriber unit 105a) is configured to separate the video signal from the multiplexed signal received at the wavelength division multiplexer/demultiplexer (fig. 1, WDM 131a) and to input the video signal to the video receiver (fig. 1, video receiver 133a), and wherein the subscriber unit without the video receiver (fig. 1, subscriber 105b) is configured to separate the video signal from the multiplexed signal received at the wavelength division multiplexer/demultiplexer, to remove the video signal (fig. 1, WDM 131b and terminator 135b), to separate the signals other than the video signal, and to input the signal other than the video signal to a transmitting and receiving section (fig. 1, transmitting and receiving section 134b). The only difference between the APA and claim 1 is that the APA specifically utilizing a WDM 131b and a terminator 135b to separate and remove the video signal from the signal other than video signal. It would have been obvious to one having ordinary skill in the art at the time the invention was made to eliminate the WDM 131b and terminator 135b and incorporate a single WDM, such as the one disclosed by Kurata in fig. 5, to separate the video signal from the signal other than video signal, since it has been held that omission of an element and its

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function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art. *In re Karlson*, 136 USPQ 184. One ordinary skill in the art at the time when the invention is made would have been motivated to incorporate a single WDM, such as the one disclosed by Kurata in fig. 5, to separate the video signal from the signal other than video signal in the system of the APA in order to utilize the widely applicable waveguide type WDM module that can be manufactured in a simple manner. The modified communication system of APA and Kurata differs from the claimed invention in that APA and Kurata do not specifically disclose that an optical amplifier is configured to amplify the video signal to be transmitted. However, an optical amplifier is well known in the art. For example, Feldman teaches using an optical amplifier (fig. 1, amplifiers 114 and 128) for amplifying the video signal to be transmitted. Therefore it would have been obvious to a person having ordinary skill in the art at the time of the invention to incorporate an optical amplifier, such as the one disclosed by Feldman, in the central office of the transmission system of APA and Kurata in order to increase the signal strength to further increase the transmission distance.

Regarding claim 8, as it is understood in view of the above 112 problems, APA, Kurata and Feldman have been discussed above in regard with claim 7. The modified system of APA, Kurata and Feldman differs from the claimed invention in that APA, Kurata and Feldman do not specifically disclose that a plurality of video signal generator configured to generate video signals. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include a plurality

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of video signal generator configured to generate video signals in the modified system of APA, Kurata and Feldman, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Regarding claim 11, Kunikane further teaches that the multiplexer/demultiplexer includes a first optical waveguide, a second optical waveguide, and a filter positioned such that the first optical waveguide and the second optical waveguide form a junction at the filter (fig. 5).

Response to Arguments

15. Applicant's other arguments file on June 9, 2007 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Ozawa (U.S. Patent US 5,960,135) discloses an optical integrated circuit for bidirectional communication systems. Albanese et al. (U.S. Patent US 4,712,859) discloses a multiplexer/demultiplexer unit with an absorber.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571)

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272-3114. The examiner can normally be reached on 9:00 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

qzw
7/21/2007



Quan-Zhen Wang